

Entered at the P. O. at Boston, Mass., as Second-Class matter.

D. TOY . . . TAILOR, 11 CHARLES STREET, NEAR BEACON STREET, BOSTON.

Having selected in London a fine assortment of Woollens for Fall and Winter, respectfully invites students to call and examine.

HATTERS AND FURRIERS



D. P. ILSLEY & CO.

It is our aim to keep constantly on hand any article of wearing apparel usually to be obtained in any first-class hat and fur establishments.

We keep a full stock of English, French and American hats for Ladies, Gentlemen and Children.

Our importations are from personal selections.

385 Washington St.

(Opposite FRANKLIN),

BOSTON.



MESSINGER BROS. & JONES,
TAILORS

—AND—

IMPORTERS,

388 WASHINGTON STREET,

BOSTON.

Ladies' Garments a Specialty.

F. L. DUNNE.
TAILOR.

Exclusive Styles of London Suitings now Open for Inspection.

338 Washington Street.

JOHN A. LOWELL & CO.
ENGRAVERS AND ART PUBLISHERS,

(MASON BUILDING,)

No. 70 KILBY STREET, BOSTON,

INVITE the attention of the public to their new and special facilities for the execution of *Fine Engraving*, in all its varieties.

Our CHRISTMAS and NEW YEAR'S CARDS for 1882-83, are acknowledged to be the finest and most artistic productions ever issued, and are for sale by all first-class stationers in America and Europe. Complete Set sent on receipt of \$5.00.

In the ART GALLERY connected with our establishment will always be found the best examples of the work of CHARLES SPRAGUE PEARCE, WM. E. NORTON, L. BIRGE HARRISON, I. M. GAUGENGIGL, GEO. W. EDWARDS, MARCUS WATERMAN, A. H. BICKNELL, and other American Artists, and a cordial invitation is extended to all interested in Art matters to visit us.

AMONG OUR PUBLICATIONS IN LINE ENGRAVING, ARE

HUNT'S "BATHERS," Engraved by SCHOFF.

PORTRAIT OF LONGFELLOW, Engraved by BURT.

And PORTRAIT OF EMERSON, Engraved by SCHOFF.

 We are also Sole Agents for ALEXANDER POPE'S Wonderful Carvings of Game Birds.



Copyright © 1900 by E. W. 1900. All Rights Reserved.

No. 11

The Tech.

VOL. II.

BOSTON, DECEMBER 20, 1882.

No. 6.

THE TECH.

Published on alternate Wednesdays, during the school year, by the students of the Massachusetts Institute of Technology.

BOARD OF DIRECTORS, 1882-3.

| | |
|--------------------------------------|--------------------------|
| H. WARD LEONARD, '83, <i>Pres.</i> | FREDERICK L. SMITH, '84. |
| GEORGE J. FORAN, '83, <i>Sec.</i> | WALTER H. BUNCE, '84. |
| I. W. LITCHFIELD, '85, <i>Treas.</i> | R. G. GAMWELL, '86. |

EDITORS.

| | |
|---|---------------------------------|
| HARVEY S. CHASE, '83, <i>Editor in Chief.</i> | G. L. R. FRENCH, '84. |
| HORACE B. GALE, '83. | ARTHUR D. LITTLE, '85. |
| J. G. EPPENDORFF, '83. | FRANK L. LOCKE, '86. |
| FRANK TENNEY, '83. | R. W. HARDON, <i>Adv't Agt.</i> |
| T. W. ROBINSON, '84. | |

Subscription, \$2.00 per year in advance. Single copies, 15 cents each.

For sale by A. WILLIAMS & Co.

ALFRED MUDGE & SON, PRINTERS, 34 SCHOOL STREET, BOSTON.

THE holidays are upon us. Fun and Festivity rule the hour, and the TECH, finding a serious and solemn tone considerably at a discount, has decided for once to follow the custom of its E. C's, and devote itself to frivolity of the most approved pattern. We hope the departure will in some degree satisfy the cravings for facetiousness, which many of our subscribers have evinced; but if it does not reach the desired standard, we can only express our sorrow therefor, and present the excuse that it is not exactly in our line.

THE last issue of THE TECH contained an editorial on the new Y. M. C. A. building, setting forth the benefits that might be derived therefrom. There seems, however, to be one point left out, the "Come one, come all," noon prayer-meetings, which form an inseparable part of this institution. Doubtless these "Free to all" meetings will be the cause of many a cut; nevertheless, we trust that the moral influence on the delinquent will more than compensate for the loss of a paltry lecture or two.

WE take pleasure in announcing the establishment of a new evening *drawing* school for students of the Institute whose time is so much occupied that they cannot indulge in their favorite work during the day. The models are of a varied and *handsome* character, including *pears*, *game* of various kinds, *houses* mostly *full*, *pots* from the *Jacques* pottery, etc., etc.

The last meeting was held at the *club's anti-room* on B-y-s-on Street, on the —th of December. Though the *quarters* were quite *limited*, there was room enough for all at the *edge* of the table, there being but *three pairs* of the *unmentionables* present.

One peculiar feature of the society is that all their drawings are essentially in the *English* style, that being best adapted to quicken the memory and develop the *senses*. There were many *callers* during the evening, several of the distinguished strangers now in town being there; among them we notice the Marquis D'Aubrian and Herr Leinhardt, the latter being well known as a student of languages, and also as the inventor of the formula.

The cotton, wool, and iron industry was well represented by the Duc D'Ardaunt of St. Nuton, who has lately been very fortunate in his speculations in slag, linen, and (b)oils.

The meeting, as well as the members, was broken up early, and all adjourned to the P— Station, where a *banquet* was served by W. Inners. *Mushrooms*, — boneless, of course, — *V. L.* cutlets, Saratoga and other varieties of *chips*, etc., etc., made up the morning's meal.

To such *clubs* we wish success with all our *hearts*, and hope for another meeting soon.

The above effusion is very good, very good indeed. We think it will pay the earnest seeker after facetiousness to devote considerable time to the harangue, and we have carefully marked all the jokes, that they may be easily seen. There is a key to the mystery. Try Poughquer.
— EDS.

THE Class Supper, as a means of promoting good fellowship among the students, has never received at the Institute the attention it deserves. '81, we think, was the first to study advanced French collectively from a hotel *menu*; and her example has been tardily followed by her successors. Life at the Institute needs more of these environments to give it what it lacks, and the Class Supper is among the best. Under its genial influence the dig. becomes a story-teller, the special architect endurable; only the punster is worse than ever. It has all the advantages of the mass meeting for the oratorically inclined, with that other advantage which the meeting cannot always boast, an audience. Things are not as they should be, when, as now, the subscription agent is the only man who counts all his classmates as his acquaintances. We have little enough to bring us together: let us make the most of what we have.

MR. FRANK L. LOCKE has been elected to represent the class of '86 on the editorial board of the TECH. Congratulations to the TECH, the class of '86, and the gentleman himself have been duly forwarded. With this issue Mr. Locke uncaps his stylograph and begins his duties. He is heartily welcomed by the editors, and it is sincerely to be hoped that through his efforts there may be found the key to the intellectual treasure-house, which '86 has so long and so skilfully kept concealed.

Mr. R. W. Hardon, '84, takes the place of Mr. Wilder as advertising agent. Mr. Hardon's business ability and perseverance are well known, and our advertising pages already show the good effect of his management.

THE Institute recently purchased 50,000 feet of land adjoining the Providence Railroad, and reached by a new street, to be built from Huntington Avenue. It is proposed to build at once a one-story building, containing 12,000 square feet of flooring, with a basement of the same capacity, and the whole to be devoted to shops for the use of the mechanical engineers and

students in the School of Mechanic Arts. Next year the building will be enlarged for the accommodation of the weaving department, while the mining and metallurgical laboratories will also be transferred to the new building.

WE publish in the supplement to this issue an article by Prof. Geo. L. Vose, in reply to the article in our last number on the "Education of Engineers," taken from the *Railroad Gazette*. The first article has excited considerable comment and criticism on the part of the students and others, and the able reply by Prof. Vose will, we hope, be read by every student at the Institute.

A Connubial Episode.

"CENTIMENT, Centiment. This train for Wedlock and Felicity. Passengers for Singleton change cars." As the brakeman threw open the car door and shouted his message down the aisle, the train rushed into a little station and came to a sudden stop with a jolt that knocked the eye-glasses from the nose of the sallow-cheeked passenger, slid the chubby baby from the lap of the motherly looking woman on the right, and nearly buried the back of a seat in the capacious paunch of the fat passenger on the left. The whistle sounded and the train was off again; while down the aisle came a large, russet-leather travelling bag, preceded by a rather good-looking young man, and followed by an equally good-looking young woman. The eyes of all the passengers were turned upon the couple as they approached an empty seat in the middle of the car; but, far from being abashed, they seemed to glory in their privilege of being gazed at, and smiled as if confident of entire sympathy. As they reached the seat, and the travelling bag was with some difficulty induced to enter, the faces of all about expressed deep interest in their movements.

It was very evident that a peculiarly blissful atmosphere enveloped these young people, and with a sympathetic smile the motherly woman replaced her babe upside down upon her lap, as her thoughts glided away toward the by-gone days and the sweet associations of a similar journey once on a time. The sallow-cheeked passenger, with a grunt of intense disgust, balanced his eye-glasses once more upon his nose and buried himself profoundly in his newspaper. The plump passenger, having released his portliness from its unpleasant proximity to the seat-back, smiled benignantly as he smoothed his waistcoat; while the other passengers appeared to fully appreciate the situa-

tion and awaited developments with a patience that may have been born of previous experience.

The young man's shining silk hat having been taken off and placed in a safe position in the rack, and his long ulster folded and placed against the window, the maiden was admitted to the seat inside and both sat down, the young man tenderly twisting his slight mustache, and by the removal of his hat, displayed his hair neatly parted in the middle and fully as shiny as the hat itself. The twisting operation having been completed to their mutual satisfaction, the lady removed her particle of a bonnet, and a pleasurable anticipation was seen to steal over their faces. Glances of appreciation and increasing interest were now exchanged by the lookers-on, and when, after a few moments of coquettish hesitation, her head sank peacefully upon his shoulder, and his arm was passed about her waist, there was a murmur of satisfaction from the entire car. As his cheek was laid upon the wavy hair, and his arm contracted in a very apparent squeeze, this murmur increased, and there were signs of suppressed applause from the more juvenile passengers at the rear of the car. The roar of the train prevented their low conversation from being heard, but, whatever the subject may have been, it appeared extremely satisfactory to the young people themselves, and, from the manifestations of supreme delight by two small boys immediately in rear of the centre of attraction, it was evident that something very enjoyable was under discussion. At nearly regular intervals there was heard a suppressed osculatory sound, when the youngsters behind would fairly hug each other in ecstasy. At each repetition the sympathetic smile across the way increased, while the sharp nose in the rear was buried deeper in the newspaper as its owner vainly attempted to shut out the sight and sound of this amiable idiocy.

The performance had continued for a considerable time, and the audience was beginning to weary of the monotony, when suddenly the fair head was raised from its restful position and the maid appeared to object to some remark by the young man. The latter quietly remonstrated and plainly desired the renewal of their former position. In spite of coaxings and pleadings the maiden remained obstinate and her voice gradually rose to a high pitch as she exclaimed: "Julius, I never, *never* will. You said I might always do just as I wanted to, and I don't want to, and I never will, — so there!"

"But, Cleo, she is almost one of the family, you know."

"I don't care," exclaimed the tearful voice; "I never did like her, and I won't have her in the house; and either she will have to go or I will." And the clouded face was turned abruptly towards the window.

This sudden demonstration reawakened the flagging interest of the passengers, the youngsters stared with

open mouth and eyes, the motherly woman betrayed a little anxiety, but the general enjoyment at the turn of affairs was unmistakable. The sallow passenger laid aside his paper, and his face was wreathed with a smile of somewhat fiendish triumph as he rubbed his hands and softly chuckled.

The silence was becoming oppressive, when the young man said, "Don't be silly, Cleo, or we had better stayed at home."

"I wish we had; and I wish we had never been married; and you're just as horrid as you can be."

Patience was no longer a virtue, and the youth feelingly replied: "Well, I wish we never had been." This remark was too much for the suffering feminine, and the only resource was to a point-lace handkerchief and a tempest of sobs.

The youth bore it bravely for a time, but the pathetic sight soon overcame him, and with a whispered promise that the obnoxious "she" should not disturb the future household, the weeping maid was again encircled and the wet cheek wiped upon the broadcloth shoulder. There appeared to be whispered repentances, and with a joyous smile the young man brought forth a red-cheeked baldwin from the pocket of his ulster, and with alternate bites the broken peace was healed and sealed in a satisfactory manner.

The sallow passenger could stand no more. Casting a withering look of contempt upon the pair, he grasped his satchel and hurriedly made his exit from the car. It was very evident that this traveller had mistaken his destination: he should have taken the other train.

With amity restored, the youngsters behind again giggled blissfully, the sympathetic smile returned, the passengers once more exchanged their glances of approval, while Cleopatra and Caius Julius, locked in each other's arms, sped swiftly on toward their journey's end — Felicity.

Only One.

THERE 's a name upon our books —

Only one, it cannot fade;

Innocent enough it looks, —

'T is the snide that never paid.

As we turn those pages o'er,

Thinking how we 'd hoped and prayed

For the money or the gore

Of the beat that never paid,

'T is with anguish we recall,

Cold and stark our bulldog laid;

And he could not overhaul

That vile wretch that never paid.

(We have another dog.)

The Messenger's Story.

TRAVELLING by rail, with its inevitable accompaniment of soot and jar, is tedious enough at any time, but toward the close of a drizzly February day I found it grow insufferable. I had exhausted the time-killing capabilities of periodicals; scenery there was none,—nothing but a dreary gray blank. I turned from the window of the Pullman in something like despair, and began to scrutinize my fellow-sufferers. One of them, whose brisk, energetic way of doing things had at first attracted my attention, I had noticed hours ago on the depot platform,—a lean, wiry man of medium height, dressed in what certain Down-Easters would call a “dark-complected suit of clothes.” Now his newspaper had fallen down, and his eyes were wandering about the car on much the same errand as my own. Our glances met, and something in them of the misery that loves company drew us together, and in a few moments we were engaged in familiar conversation.

He had been, it soon appeared, an express messenger on the Central Pacific in its early days, and then going to 'Frisco, had picked up a fortune after the easy fashion of the time. Afterward, with greater wisdom than most of his associates showed, he had come East when everything was “flush,” and so escaped the crash which made the ephemeral riches of so many men take wings.

My new-found friend seemed in a talkative mood, and seemed, moreover, one of those restless spirits who, wherever placed, strike for adventure as a turtle strikes for water. To draw him out I said that his life as express messenger must have been one not wanting in exciting episodes. He smiled peculiarly at my remark. It was a smile of recollection, and one that awakened curiosity; and just as the porter came around to light the lamps he started on this story:—

“Looking after express packages on the train in those days was hardly the easy berth it is now. The messenger's fitness for the position was largely decided by his ability to use a Derringer. We always carried more or less bullion; and robberies, in whose committal the messenger was killed, were disagreeably frequent.

“One night the darkness and a pelting rain had made us late, and as we rushed into Omaha twenty minutes behind time an unusual bustle greeted us. As they were hurrying the freight on board I heard the agent calling for somebody to ‘give him a lift on the corpse.’ He found his somebody in a big, bewhiskered fellow standing near, who immediately offered his services. When the long pine box containing the coffin was on the car the fellow with the whiskers looked at the plate on the lid, and suggested that, as the body was ‘going through,’ it would be less in the way and less likely to be disturbed if placed by my desk. So, after a few additional lifts and shoves, it was placed behind my chair.

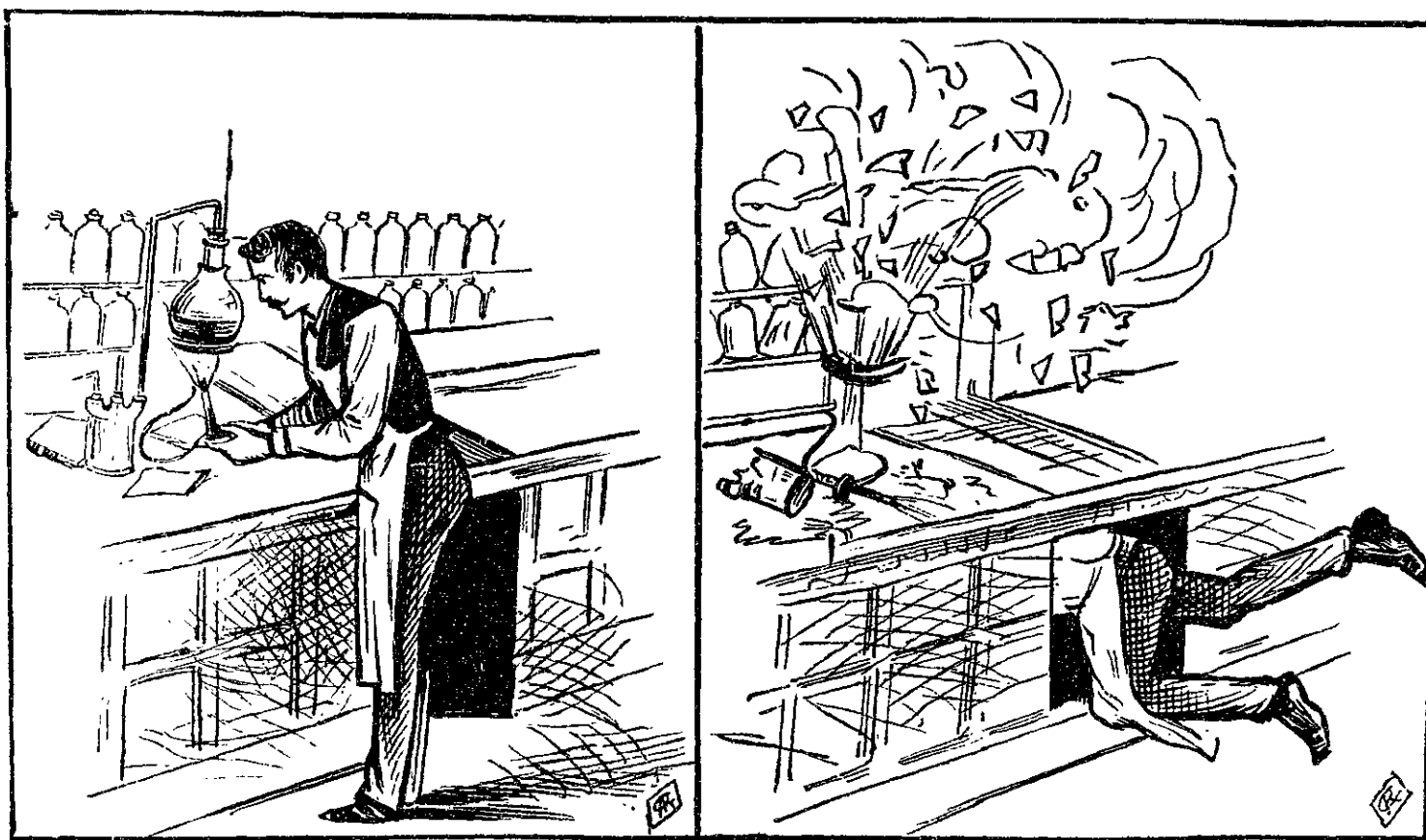
“It was all over in a moment, and we were puffing out of the depot and into the storm outside. I stood by the door of the car watching the lights of the town as they sank into the darkness. A long stretch of lonely country lay before us, mile after mile of emptiness, which, in the darkness, seemed interminable. The rain kept up a dreary tattoo on the roof of the car, and came beating down in my face as I stood by the door. We rumbled over a bridge, and I could hear the swollen river swashing along the abutments.

“I turned from the door, but tried in vain to bring myself to work. A nervousness inspired by the wildness of the night clung about me, and I could not shake it off. All the murders and robberies of which the road could boast passed before me in a mournful procession, like the ghosts of Banquo's kinsmen. Less than a month before, a messenger had been found dead,—murdered,—and his car robbed. The presence of the considerable bullion which I had in the car that night with several money packages did not tend to dispel the fears which I now tried to silence by ridicule. I had so far succeeded that I was about to sit down to my desk when my eye fell on the long pine box. There was nothing unusual about it. I had travelled alone with similar ones a hundred times before, and had scarcely given a thought to their ghostly occupants. That night, however, it was different. I thought of the silent figure behind my chair with a feeling of curiosity which amounted to apprehension. and I soon determined to make an investigation for the sake of my peace of mind. My worst suspicions were confirmed as I discovered with the help of my knife that the screws had been merely dropped into holes bored for them. I thought of the circumstances under which the box had been introduced,—the officious helper who had suggested that it be placed in my room so near my desk,—and the conviction flashed upon me that he could be no other than the pal of some villanous desperado now concealed in the box and only waiting his chance to make short of me. I whipped out my revolver, cocked it, and hastily raised the box cover—”

“Bigsville,” shouted the conductor, “Bigsville,” and my friend grabbed his hat-box and rushed for the platform. “Hold on,” I cried, for my curiosity was greatly excited,—“hold on, my friend, tell me what was in that box.” He had reached the door, but stopped an instant, turned toward me with a smile, and made a reply which was lost in the sudden shriek of the steam-whistle. The train started, and the express messenger hastily disappeared outside the car.

I have written to the Bigsville postmaster, I have consulted the police, but all in vain. My peace of mind has fled. Tell me, ah, my friends,

WHAT WAS IN THAT BOX?



A BOOM IN CHEM. LAB.

The Meeting.

IT was night, and room No. 4 appeared deserted. A few straggling moonbeams made their way with difficulty through the dust-covered windows, and dimly revealed two forms at a desk upon a low platform. The forms were bowed upon the desk, their heads upon their arms, and both appeared sunk in profound slumber. Beside these two, no living thing was visible, and the stillness was as complete as that of the sepulchre.

Suddenly the solemn hush was broken, as one of the sleepers wearily raised his head and addressed the other, "Hollo, secretary! what time was this meeting called?"

Without moving, the second form responded, "'S afternoon at four thirty."

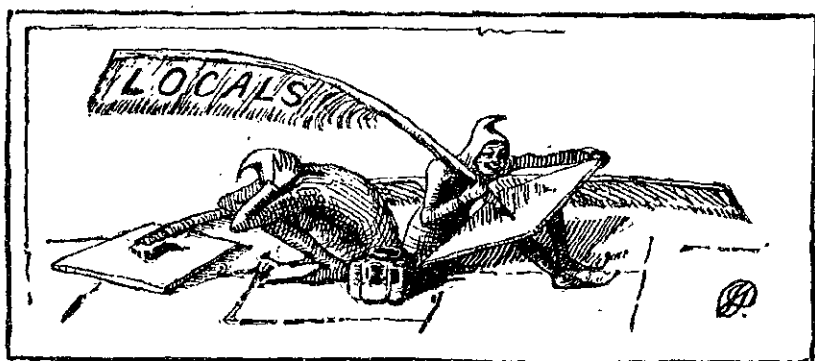
"H'm, four thirty! First man will be here in six hours — half past ten. Now it's nine. An 'our 'n' a half more. Well, good night, secretary." And the president of the Athletic Club again laid his head upon his arm and followed the secretary into the realms of unconsciousness, to await the assembling of his colleagues.

S. M. E.

AT the meeting of Tuesday, Dec. 12, the following officers were elected for the ensuing four weeks: — *President*, Scott, '83; *Vice-President*, Dearborn, '84; *Secretary and Treasurer*, Bates, '85.

Following the election of officers an address was given by Mr. C. J. H. Woodbury, on Construction of Mill Floors. Mr. Woodbury, who was formerly a student of engineering at the Institute, is inspector of the Boston Manufacturers' Mutual Fire Insurance Company, and his experience in this position puts an additional value on the facts and figures given.

At the meeting of the Society of Arts, last Thursday evening, the attendance was unusually large. Mr. J. M. Pendleton gave an interesting account of the Faure system of electrical storage, and its application to lighting, etc. Storage batteries were exhibited, with which arc and incandescent lamps were lighted, and a sewing machine was run by a current from four cells and a small motor of the "double induction" type fastened under the table of the machine.



WHAT kind of art are the '83 miners especially fond of? The milk cart.

——! It's a lemon.

Are you going to the rink, Christmas?

"O Gee!" says a mechanical, "only one day's rest Christmas."

The Juniors commenced their physical laboratory work last week.

We hear that the '84 Mechanicals are using Mark Twain as a text-book.

Uncle John seems to have a great affinity for the Senior mechanicals this year.

The 2'G. Society will probably hold a ball about the middle of February next.

The boneless wonder of '85 will commence practice in the gym. directly after Christmas.

Capen '83, Fiske '85, and Ryan special were initiated at the last regular meeting of the 2 G. Society.

Did the Fresh who recently asked for an *inverted* cover to a porcelain crucible discover his mistake?

The quantitative weighing room has recently received an addition of two new Becker and Sons' scales.

Gibbon's name was recently called in English and strangely enough answered. Could it have been the shade of R. Tilden?

We are afraid our before-mentioned chemist has suffered a relapse: he seems to have a yearning after the Woman's Laboratory.

Is there any man, who heard the last lecture in physics given to the Juniors, who has any doubt of the curiosity of the female sex?

Mr. —, of lettering fame, who has been at the Institute a number of years, thinks that entirely too much time is spent in theoretical work.

The miners ought to turn out strongly at "hare and hounds," as they have such an excellent chance to practise during their night runs.

A certain Freshman, speaking of a recent issue of the TECH, was heard to say something about an article on the *coefficient of leather friction*.

Some of the miners ought to go out and show the use of the drill to those men who are trying to pick the frozen ground for the foundation for the new building.

Will the investigating Fresh who recently viewed the transit without colored glass kindly give us for publication the result of his research when he gets out?

One of the members of '85 was quite seriously poisoned while using cyanide of potassium. Students cannot be too careful while using this poisonous chemical.

The V. L. (very light) eaters have had their pictures taken at Ritz & Hastings's. It was a pretty hard crowd to give the class photographer for a starter.

C. M. Wilder, '85, left for his home in Cincinnati last Wednesday, where he remains about a month before going South to recover from the effects of his late illness.

One of the Seniors is heard daily singing praises and giving thanks that he has thrown off the yoke of bondage and is no longer a slave to that vile weed, tobacco.

A Junior recently asked for Pickering's Physical Manipulations at a scientific bookstore, and, after some delay, was informed that they no longer kept *medical* books.

If any one wants to see grace personified, he had better go up to the skating rink and see some of the students play polo. They ought to form a society called the Gazelles.

The delight of the professor in the brilliancy of the present Freshman class was well expressed when he supposed there must be a minimum amount of knowledge which each of them possessed as an apology for being here at all!

Mr. C——, formerly of Amherst, who has achieved great success in the study of hydraulics, intends going to Germany to finish his course in hydraulics and lettering.

A Freshman who studies both chemistry and history showed his clear comprehension of both the other day by explaining how a solution of Bismarck was used in a certain experiment.

The class in fourth-year applied mechanics has been divided into three sections. The mechanicals and miners form separate divisions, while the civils and architects unite and form the third.

We now see why there are so few students taking Spanish. One of them was informed the other day by the professor that it required at least "some" brains to master the subject. "See, Signor?"

One of the senior mechanicals has attained such a surprising degree of proficiency in the file shop that he is able to catch an oil can on the end of a stick nine times out of ten before an instructor can interfere. This shows the value of perseverance.

The carnival, Christmas night, at the Olympian Club Skating Rink will be the grandest affair of the year. Two large halls, one for skating, one for dancing, and two large brass bands. The great organ will be played at intervals. Ten thousand dollars' worth of costumes will be on the floor.

The first afternoon hop of the season took place in the new gymnasium last Saturday afternoon. The dance was given under the auspices of the Gymnasium Committee, for the purpose of raising funds for the purchase of apparatus for the gymnasium; and though as regards this object the affair was a decided failure, but about forty couples being present, yet from a social standpoint the dance was a success. The small attendance may be partly accounted for by poor management and partly to that lack of public spirit which is too often felt at the Institute. Music was furnished by Baldwin's Cadet Band, five pieces.

PLEASANT LITTLE JOKES.

A head of water — claret punch.

A sound investment — telephone stock.

'84 wishes to know if Baldwin's red cheeks gave him his apple-ation.

Mrs. Partington wants to know whether Washington is paved with abstract or concrete.

'85 has a conundrum: When is the game of life ended? When the Angel Gabriel plays his last trump.

German professor, in lecture to students on water power, — "It might be stated here, that water was formerly used in this country for drinking purposes."

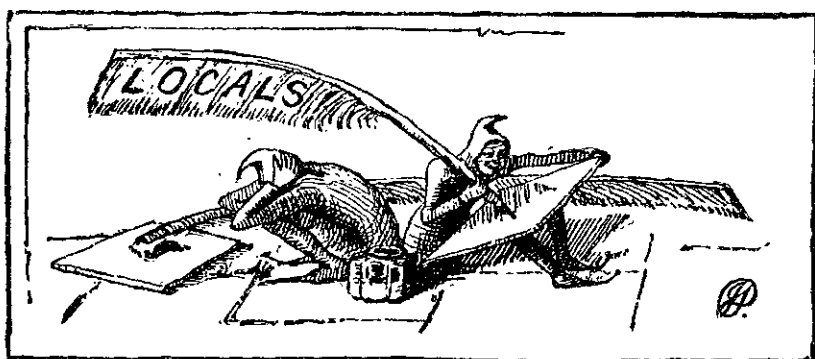
Master Terrigo, '86, has seen the new poling place on the corner and inquires to what ward the Institute belongs. The immediate reply is: "To Ward L——d, of course!"

The mystery in regard to the laundering of our A. A.'s shirt collar has been solved. The boys have visited the Norway Iron Works. They have seen the rolls, and are quite sure it could safely go through.

An Indiana boy ten years old is said to have an ear a foot in diameter. — *New Haven Register*.

It is a question whether even this ear would be large enough to take in the point of some of Prof. N——'s jokes.

Some of the readers of THE TECH may have noticed the octagonal tin box which occasionally ornaments the Common and claims to contain *The Grand Moral Peep-Show*. The other night a son of down-trodden son of Erin was induced by the proprietor of the box to expend the necessary ten cents and apply his eyes to the orifice. The showman, however, neglected to raise the tin screens which shut the wonders of the show from the outside world, and Pat gazed for several minutes in vain. At last he ventured to ask, "An' phat did ye say ye called it?" "The Battle of Prague," said the showman. "Shure, an' if that's the battle of Prague, it was fought on a damn dark night," was the disgusted rejoinder as the victim turned away.



WHAT kind of art are the '83 miners especially fond of? The milk cart.

——! It's a lemon.

Are you going to the rink, Christmas?

"O Gee!" says a mechanical, "only one day's rest Christmas."

The Juniors commenced their physical laboratory work last week.

We hear that the '84 Mechanicals are using Mark Twain as a text-book.

Uncle John seems to have a great affinity for the Senior mechanicals this year.

The 2 G. Society will probably hold a ball about the middle of February next.

The boneless wonder of '85 will commence practice in the gym. directly after Christmas.

Capen '83, Fiske '85, and Ryan special were initiated at the last regular meeting of the 2 G. Society.

Did the Fresh who recently asked for an *inverted* cover to a porcelain crucible discover his mistake?

The quantitative weighing room has recently received an addition of two new Becker and Sons' scales.

Gibbon's name was recently called in English and strangely enough answered. Could it have been the shade of R. Tilden?

We are afraid our before-mentioned chemist has suffered a relapse: he seems to have a yearning after the Woman's Laboratory.

Is there any man, who heard the last lecture in physics given to the Juniors, who has any doubt of the curiosity of the female sex?

Mr. ——, of lettering fame, who has been at the Institute a number of years, thinks that entirely too much time is spent in theoretical work.

The miners ought to turn out strongly at "hare and hounds," as they have such an excellent chance to practise during their night runs.

A certain Freshman, speaking of a recent issue of the TECH, was heard to say something about an article on the *coefficient of leather friction*.

Some of the miners ought to go out and show the use of the drill to those men who are trying to pick the frozen ground for the foundation for the new building.

Will the investigating Fresh who recently viewed the transit without colored glass kindly give us for publication the result of his research when he gets out?

One of the members of '85 was quite seriously poisoned while using cyanide of potassium. Students cannot be too careful while using this poisonous chemical.

The V. L. (very light) eaters have had their pictures taken at Ritz & Hastings's. It was a pretty hard crowd to give the class photographer for a starter.

C. M. Wilder, '85, left for his home in Cincinnati last Wednesday, where he remains about a month before going South to recover from the effects of his late illness.

One of the Seniors is heard daily singing praises and giving thanks that he has thrown off the yoke of bondage and is no longer a slave to that vile weed, tobacco.

A Junior recently asked for Pickering's Physical Manipulations at a scientific bookstore, and, after some delay, was informed that they no longer kept *medical* books.

If any one wants to see grace personified, he had better go up to the skating rink and see some of the students play polo. They ought to form a society called the Gazelles.

The delight of the professor in the brilliancy of the present Freshman class was well expressed when he supposed there must be a minimum amount of knowledge which each of them possessed as an apology for being here at all!

Mr. C——, formerly of Amherst, who has achieved great success in the study of hydraulics, intends going to Germany to finish his course in hydraulics and lettering.

A Freshman who studies both chemistry and history showed his clear comprehension of both the other day by explaining how a solution of Bismarck was used in a certain experiment.

The class in fourth-year applied mechanics has been divided into three sections. The mechanicals and miners form separate divisions, while the civils and architects unite and form the third.

We now see why there are so few students taking Spanish. One of them was informed the other day by the professor that it required at least "some" brains to master the subject. "See, Signor?"

One of the senior mechanicals has attained such a surprising degree of proficiency in the file shop that he is able to catch an oil can on the end of a stick nine times out of ten before an instructor can interfere. This shows the value of perseverance.

The carnival, Christmas night, at the Olympian Club Skating Rink will be the grandest affair of the year. Two large halls, one for skating, one for dancing, and two large brass bands. The great organ will be played at intervals. Ten thousand dollars' worth of costumes will be on the floor.

The first afternoon hop of the season took place in the new gymnasium last Saturday afternoon. The dance was given under the auspices of the Gymnasium Committee, for the purpose of raising funds for the purchase of apparatus for the gymnasium; and though as regards this object the affair was a decided failure, but about forty couples being present, yet from a social standpoint the dance was a success. The small attendance may be partly accounted for by poor management and partly to that lack of public spirit which is too often felt at the Institute. Music was furnished by Baldwin's Cadet Band, five pieces.

PLEASANT LITTLE JOKES.

A head of water — claret punch.

A sound investment — telephone stock.

'84 wishes to know if Baldwin's red cheeks gave him his apple-ation.

Mrs. Partington wants to know whether Washington is paved with abstract or concrete.

'85 has a conundrum: When is the game of life ended? When the Angel Gabriel plays his last trump.

German professor, in lecture to students on water power, — "It might be stated here, that water was formerly used in this country for drinking purposes."

Master Terrigo, '86, has seen the new poling place on the corner and inquires to what ward the Institute belongs. The immediate reply is: "To Ward L——d, of course!"

The mystery in regard to the laundering of our A. A.'s shirt collar has been solved. The boys have visited the Norway Iron Works. They have seen the rolls, and are quite sure it could safely go through.

An Indiana boy ten years old is said to have an ear a foot in diameter. — *New Haven Register*.

It is a question whether even this ear would be large enough to take in the point of some of Prof. N——'s jokes.

Some of the readers of THE TECH may have noticed the octagonal tin box which occasionally ornaments the Common and claims to contain *The Grand Moral Peep-Show*. The other night a son of down-trodden son of Erin was induced by the proprietor of the box to expend the necessary ten cents and apply his eyes to the orifice. The showman, however, neglected to raise the tin screens which shut the wonders of the show from the outside world, and Pat gazed for several minutes in vain. At last he ventured to ask, "An' phat did ye say ye called it?" "The Battle of Prague," said the showman. "Shure, an' if that's the battle of Prague, it was fought on a damn dark night," was the disgusted rejoinder as the victim turned away.

Apropos of the recent transit of Venus, the following conversation was heard between two Hibernian ladies:—

"Arrah, Mrs. Murphy, it was a narrow iscape we had yisterday!"

"Iscap, is it? Do ye mane the transit of Vanus?"

"Transit of Vanus indade. Sure was n't the comit a passin' the sun an' was n't iverybody a lookin' to see wud it shstrike an' the whole wurruld be burned up aloive? We're safe now, blissid be the howly Vargin! but it was a narrow iscape."

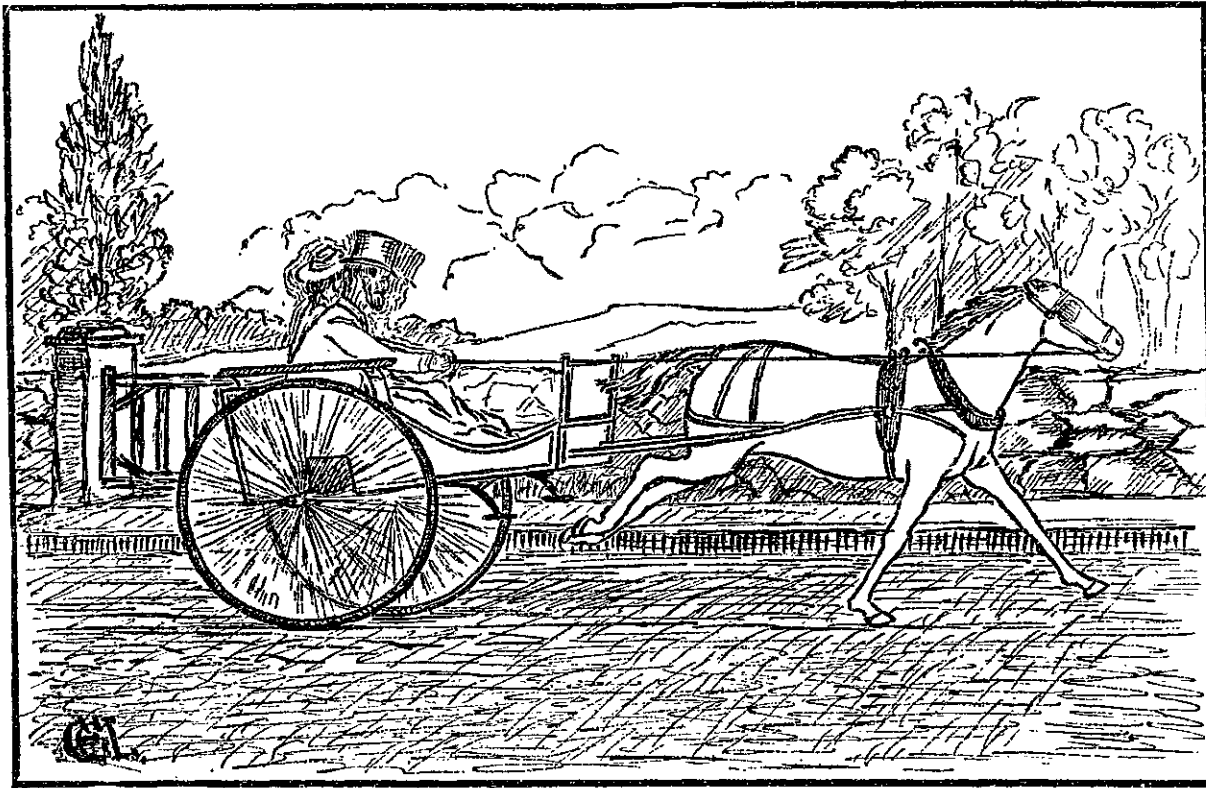
There is a story abroad in regard to a prominent theatre manager. The gentleman is not noted for his classical learning, although the sum total of his bank account may require two commas in writing. On the occasion of an excursion down the harbor he had made himself very agreeable to the ladies. The return was very stormy, but, after many propitiations to Neptune, the party arrived safely at the wharf, and as the manager, with a pale face, assisted the ladies ashore, he remarked that it really did seem good to set his foot once more on *vice versa*.

A story has just come to hand which brings pleasantly to mind the kindness of the University of Pennsylvania during the Techs' visit to the Centennial. The battalion had encamped on the grounds of the University, and by some mistake a small boy of twelve, who had been allowed to accompany the party, was put one night on guard. He had paced back and forth for some time, when three students from the University of Pennsylvania approached the line and endeavored to pass. The juvenile guard shouted, "You can't go through there"; but the students only replied, "Oh, yes we can, and we're going." The guard looked them over for a moment. "Well, two of you can go through, but," as he brought his gun down with a slap, "*I'll stick the other one.*"

We protest, but here goes:—

A DELICATE POINT. — A printer in Philadelphia has brought an action against a telephone company for removing their instrument from his premises, on the ground that it was being made the medium of profane and vulgar language. The printer denies the general charge, but admits the use of "damn." The point, therefore, for the court is: Is damn a profane word? "The decision," says an American contemporary, "will be awaited with deep interest by a host of worthy men who, in moments of great physical or mental torture, have found a grateful solace in the use of that compact and cogent expletive." — *Ex.*

Students interested in marine engineering will be entertained by two articles in the *Mechanical News* for November. One is a description of the electric launch, which lately made a trial trip on the Thames, and the other an account of "Mr. Fryer's Palace Sea Car," a model of which has been exhibited in the Harlem River, which is simply a three-wheel wagon or tricycle, which is designed to run on the water as a vehicle runs on the land, the wheels being hollow, and serving at once as floats and paddles. The inventor predicts that his water car will travel at railroad speed, and make the passage of the Atlantic in a week or less, carrying only passengers, mails, and light express matter. This idea is recommended to "Richelieu" Robinson and other spread-eagle politicians, who desire to send an army across the seas to beard the British lion in his den and spread consternation among the effete despotisms of Europe. With a fleet of tricycle ships our navy could quickly cross to England, dodge the clumsy ironclads of Johnny Bull, and, by running the ships overland for a short distance, surround London with the fleet, and "lay the city in ashes" at their leisure. The plan is perfectly feasible, and if Mr. Robinson will but make a few speeches in its favor, success is sure.



THE WAY THE INSTANTANEOUS PHOTOGRAPH LOOKED.

Noticeable Articles in Some of the November Magazines.

Nineteenth Century. "Irish Revolution and English Liberals," by John Morley. Mr. Morley is editor of the *Pall Mall Gazette*, the ablest of the London Liberal papers, and everything he writes on political affairs is worthy of attention. There is no better way of following the course of European affairs than to take and read the *Pall Mall Budget*, the weekly issue of the *Pall Mall Gazette*. "A Liverpool Address," by Matthew Arnold. Everything that Mr. Arnold writes is worth reading, if it were only for his perfect grace of style. This address was given at the opening of the session of University College, Liverpool.

Fortnightly Review. "Life and Work of the late Prof. Balfour," by Prof. Moseley, of the Challenger Expedition. Interesting to students of biology.

Contemporary Review. "Progress and Poverty: a Criticism," by Emile de Ladeleye. A notice, by an eminent Belgium economist, of a socialistic book by a Mr. George, which has recently attracted some attention.

These three leading English reviews, the *Nineteenth Century*, *Fortnightly*, and *Contemporary*, are now published at twenty cents a number, by Munro, publisher of the "Seaside Library."

The Century. "The Supreme Court of the United States." An illustrated article, with a fine portrait of the great Chief Justice Marshall. "The Point of View," by Henry James, Jr. Views of America in a set of letters from a young lady from Paris, an English

M. P., Mr. Cockerel, an American just returned from Europe, etc. These letters are great fun.

North American Review. "Advantages of the Jury System," by Judge Dwight Foster. Interesting to the Junior class. W. P. A.

The miners of '84 are referred to an article in the *Engineering and Mining Journal* for Dec. 6, page 383, on spiral winding engines for hoisting coal. R. H. R.

The Seniors will be interested in a discussion in the last *Van Nostrand's Magazine* on Weyrauch's formula and Wöhler's experiments.

Answers to Correspondents.

V. L. — Oh, yes.

B. and S. — Yes, indeed.

MECHANICAL ENGINEER. — We refer you to Mr. Bates.

J. G. H. — The Institute Fair has closed.

* — Go to the rink.

"GARBAGE." — Leonard's young man will call.

'86. — Meat at night is rather hearty.

ADONIS. — Venus has transat.

FRESH. — Examinations are elective. We don't know where the co-eds will hang their stockings.

"SECRECY." —

DEC. 20, 1882.

| | |
|--|--------------|
| Mr. Secrecy to Editor TECH, | Dr. |
| To 3 pages manuscript advice | \$3.00 |
| 1 stamp | .01 |
| | <hr/> \$3.01 |

Rec'd pay't.

Please forward.

Recent Patents.

We have established a TECH Patent Solicitation Agency, and are prepared to obtain letters patent from the government for all new inventions which appear to us useful and desirable for the community *free of charge*. This offer is made to all present or former students at this institution. A description of each article patented through us will be published and advertised in this paper.

Address, WALTERS & BUNCE, Patent Solicitors, TECH Office.

Drafting for patents will also be done at this office.

A VERY ingenious and efficient rat-trap has been invented, which will be found invaluable to those whose habitations are infested by the vermin; and it may also be made a source of revenue to the owner, as is shown.

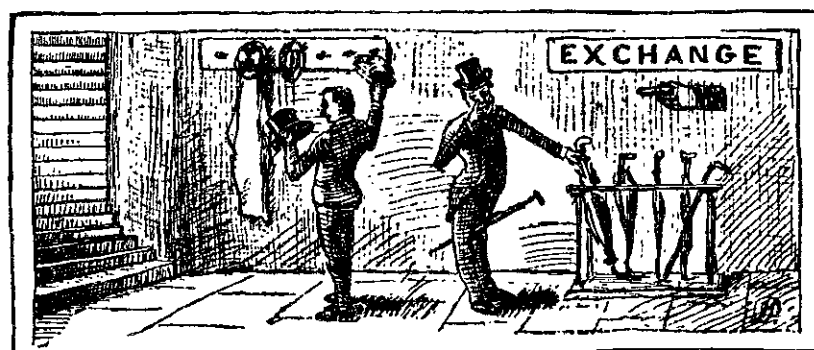
The trap is in the shape of a mansion house, with L attached, and rests upon a somewhat high foundation, the front door being reached by a flight of imitation granite steps. The rat, entering by this door, immediately steps on a false bottom in the hallway, which is pressed down, and closes the door behind and opens another in front, which discloses a room at the farther end of the hall. This room is arranged with shelves, which are loaded with tempting morsels, the whole being illuminated by an Edison incandescent electric lamp. The rat rushes precipitately toward this room, but is stopped by a glass partition, and finds himself in an elevator, which immediately rises, carrying him to the second story. The rat then attempts to escape through a small opening, and is assailed by a strong jet of chloroform, which induces insensibility. The inanimate body is seized by a pair of metallic fingers and pushed forward to a machine whose operation is much like that of the famous guillotine. Here the body is reduced to hash and carried forward to a barrel, whence it may be retailed at fair prices.

With but little difficulty, in private families, small dogs may be induced to enter the apparatus, and thus the revenue be largely increased.

A NEW and improved tombstone and vault combined has been patented. It unites attractiveness with simplicity and cheapness, and, being completely guaranteed, the price will be refunded should the article prove unsatisfactory to occupant.

The invention consists of a hinged marble slab set vertically, on which are engraved scenes from the life of the interred, and which is joined to a strong iron case sunk in the earth. This case will receive the deceased, and is provided with a heavy lid under which is concealed a system of strong steel springs, connected by a copper wire with a delicate vibrator and battery under the slab. This vibrator is extremely sensitive to loud noises; and when the latter are sufficiently repeated, it will close the circuit and release the springs.

The invention is intended to simplify somewhat the work of resurrection; for by the vigorous blasts of the awakening trumpet the vibrator will be sufficiently agitated to make connection, the springs will be released, and the lid irresistibly lifted upward, completely uncovering the remains and giving an easy means of exit to the latter.



NOW with the ghost of Christmas present, almost upon us, we turn to our exchanges, expecting to find in them that peace on earth and good will toward men to which the season owes its charm. Instead, however, of the concord for which we hoped, we find each one presenting its own peculiar grievance. Some are still bemoaning the shortness of the Thanksgiving recess, — but we will pass them by. We can hardly appreciate their feelings, for we have the whole of Christmas day. Think of it! The whole day under the ancestral roof, if your parents haven't moved, as they probably have done. Some of us who live beyond the Mississippi may have to come away before the after-dinner speeches are quite over, in order to catch the early east-bound train; but we must not ask too much.

Turning from the consideration of our own felicity, we take up a Harvard paper — any one will do — and there we find, as we have found several times before, that Yale has beaten Harvard at foot-ball, and so has, for some occult reason, lost, as after each former victory, the respect of the college community. This time, however, the behavior of the Yale men was so shockingly awful, so utterly opposed to the teachings of the "Bazaar Book of Decorum," that Harvard is considering the expediency of removing herself forever from the contaminating influence, and confining her athletic contests to games of chess by telegraph. Princeton takes her defeat somewhat more philosophically; only Columbia, who has most cause for complaint, looks hopefully to the future in a manly way. The papers from the smaller colleges reflect a somewhat more tranquil state of mind; but even they are begging for a new plank walk, or a

rejuvenated pump, as a reminder of the season of the year.

That energetic publication, the *Railroad Gazette*, continues to keep abreast of the times and to hold its own as the standard journal on all subjects relating to its special department. Besides the vigorous but perhaps too one-sided article on "The Education of Engineers," from which we quote in another column, a November issue contains, among other matter, a complete account of the "Tests of Passenger Locomotives on the Boston and Albany," made by Mr. George H. Barrus, a graduate of the M. I. T.

An editorial in *Cotton, Wool and Iron* for Dec. 2, comparing the instruction at Harvard College with that given at the Institute of Technology, says, "There are one hundred students of the Institute paying their own way, earning respect and position, where there is one from Harvard College who has taken the same ground and maintained it for any considerable length of time consecutively."

In the issue of Dec. 9 is a full report of a lecture on the "Growth of the Steam Engine," delivered by Prof. Channing Whitaker before the Rhode Island Association of Steam Engineers, on Dec 2, 1882.

THE following is evidently from some Yale paper: —

In the Future.

I saw a tadpole in a bog.
Close by upon a sunny log
There basked a large and pompous frog.

The tadpole gazed with envious eye
Upon the scene, then heaved a sigh,
And softly whispered, "*By and by.*"

The Freshman gazed with look intense,
Upon the awe-inspiring fence,
And softly whispered, "One year hence."

O tadpole Freshman in the bog,
Remain one year, then mount the log,
A full-formed Sophomoric frog.

Is a girl who goes to church to show her new seal-skin garment sacque religious? — *Com. Bulletin.*



PIPES are taking the place of cigarettes at Columbia, according to the *Spectator*.

The Yale crew has already begun work.

Columbia is to have a new observatory.

Bowdoin Seniors are to have lectures on the fine arts.

A gum game — hunting for one's rubbers. — *Lampoon.*

Rushes between '85 and '86 have been common at Columbia.

Trilets.

For a moment or two

We 've been both very quiet —
And, between me and you,

For a moment or two

I 've not known what to do,
But my thoughts have run riot.

For a moment or two

We 've been both very quiet.

Her eye looks askance

But her smile is suspicious.

Were it not for that glance

Her eye darts askance,

I should think I 'd a chance —

Is the moment auspicious?

Her eye looks askance,

But her smile is suspicious.

Her glance is subdued,

But her lips are a-pouting.

There 's a change in her mood,

Her glance is subdued —

I was not *very* rude.

Will she give me a flouting?

Her glance is subdued,

But her lips are a-pouting.

Hush! she 's going to speak,

I've a penitent forehead;

I appear very meek.

Hush! she 's going to speak.

How she dimples her cheek!

"Jack, I think you are horrid!"

Hush! she 's going to speak —

I've a penitent forehead.

— *Chaff.*



TWO SOULS WITH BUT A SINGLE THOUGHT.

(Query. — What thought? — Ed.)

Harvard has sixty-seven more students now than last year. Thirteen thousand volumes have been added to the library.

The Amulet, from the co-eds. of the University of Michigan, is soon to appear, and promises to be quite an interesting publication.

Put some sponges in her bustle,
She is going out to skate,
She will need their yielding softness
When she tries the figure eight.

— *Ex*

Recitation in mechanics. Professor: "Now, Mr. G, what was the first phenomenon noted in connection with the force of gravity?" Mr. G hesitates (B prompts G),—"Adam fell." — *Ex*.

Time: Election day. Slightly exhilarated individual in front of the city hall, vainly trying to put on his coat. Sympathizing passer-by: "You're putting the right arm into the left sleeve." Exhilarated individual: "That's all right, I—I'm le—left handed." — *Ex*.

It is said that Harvard is seriously contemplating asking Yale to play foot ball in dress suits. — *Record*.

When skaking hands remove your—glove;
Don't let the soup-plate—fall;
And never attempt Platonic—love
At a simple evening—call.

— *Society ed. of Tiger*.

VIOLA VASSAR (*who is home on her Thanksgiving vacation*) says she don't object to a man's staring at her; but when she looks back and finds him looking back too, it's *too presuming* for anything. — *Athenæum*.

A man who was there thus reports a lecture on English literature at one of the neighboring colleges. *Professor*: "Gentlemen, please come to order. Milton was a great poet. He wrote 'Paradise Lost.' Schiller was also a great poet. His works were good. There were also many other great poets. At my next lecture I will treat of the great prose writers. Please go out quietly, gentlemen." — *Orient*.

Tech Supplement.

BOSTON, DECEMBER 20, 1882.

The Education of Engineers.

EDITOR OF THE TECH, — In your issue of Dec. 6, you reprinted from the *Railroad Gazette* an article under the above heading, purporting to come from a "practical man," in which some advice is given to a young man who wishes to educate himself for the profession of civil engineer. As this advice is so entirely opposed to all advanced ideas in regard to technical education, and as it applies not only to the civil engineer, but to the mechanical engineer and the architect as well, — and indeed to a person engaging in any industrial pursuit, — I will accept your invitation to say a few words upon "the other side of the question." To put the article from the *Gazette* into a few words, it amounts to just about this: that while there are certain occupations, such as the making of surveys, the building of earthworks and masonry, the laying of rails, and the construction of bridges, the term "profession of civil engineering" is an absurdity, and we are gravely told that our technical schools are of little or no real value, and the young man is advised, after having obtained a very rudimentary knowledge of algebra, geometry, and trigonometry, to "plunge into practice at once." If he wishes to learn how to locate a railroad, according to the *Gazette*, he should join a party of men who are engaged in railroad location; if he wants to learn about grading and masonry, he should find a contractor who is employed upon such work; if he wants a knowledge of bridge building, he can learn how to design and build bridges very much better by entering the employ of some firm in that line of business than he can in a technical school. Not only are we treated to this bit of wisdom, but we are told that "there is not a branch of civil or mechanical engineering now practised in this country in which the men who have achieved either the greatest distinction or pecuniary success have had a liberal education, either classical or technical"; and that, "as a matter of fact, what can be learned in a common school is sufficient to enable a man to become eminent or successful in any branch of engineering"; and finally, that "so far as the achievement of success, *i. e.*, making money by honorable means" (we won't stop to criticise this definition), "is concerned, the higher technical education is of little or no help."

To a person who has witnessed the rise and progress of technical education in this or in any other country, such statements are their own severest criticism. The so-called "practical man," who expresses such opinions, puts himself in direct opposition to the illustrious men of all countries who have placed themselves at the summit of the engineering profession. The world has never seen a man more skilled in the best engineering

practice, or more interested in the elevation and thorough training of engineers, than the late William Fairbairn of Manchester. "It is absurd," says Mr. Fairbairn, "to talk against theory, as if a knowledge of the exact sciences was a dangerous and useless attainment. Nothing can be more erroneous than this impression, as on close inspection there is no practice without theory, any more than there is effect without a cause. In the useful arts theory can only be considered dangerous when it is not reducible to practice; and the real meaning of the term "theory," which creates so much alarm in the minds of practical men, is neither more nor less than a series of definite rules by which practice is governed, and through which we derive, from fixed and definite laws, those sound and definite results which of all others it is the primary object of practice to accomplish. In my opinion, every one should be taught the rudiments and the higher branches of their professions upon the same principles that barristers and physicians are taught. All persons intended for the professional pursuits, in connection with the arts of construction, should have a theoretical as well as a practical education."

"It is notorious," says Mr. John Scott Russell, — and certainly no better authority ever lived, — "that the railways which have been made in the educated countries of Germany and Switzerland have been made far cheaper than those constructed by us in England. It is known that they have been made by pupils of the industrial schools and technical colleges of those countries; and I know many of these distinguished men who take pride in saying that they owe their positions entirely to their technical schools." "A young man," says a recent writer in the *Engineering News*, "who wishes to attain success in the occupation of a civil engineer ought to begin by obtaining a sound technical education. The indications are that a technical education as a qualification for technical pursuits will grow every year more and more important, until finally it will become in this country, as it is now in Germany, indispensable." "The way to excellence in engineering, now," says a well-known English writer, "is not by promiscuous trial and by happy guess-work, but by carefully studying what has already been done. Formerly, the only education was that of actual experience. Now a large mass of experience has been digested, and general rules begin to appear. There is an immense advantage to be gained by attacking this mass of knowledge in a systematic manner, such as that in which it comes before the student in his course through a college. This is in truth the only manner in which anything like a complete mastery can be obtained. To

attempt it by private study is to work at a great disadvantage. The engineer is the man to whom, more than any other, we owe the conquests that have been made within this century over material obstacles, the substitution of computation for guess-work, of definite knowledge and the clear purpose for confusion and blind groping. He has done much, and much remains to do; and he will do that best who brings to the work the formulated experience of his predecessors, and a firm grasp on the principles that underly all practice."

Not only are the statements of the writer in the *Gazette* about fifty years behind the times, but they are grossly incorrect. To say that "there is not a branch of civil or mechanical engineering now practised in this country in which the men who have achieved the greatest distinction have had a liberal education, either classical or technical," is to show that the "practical man" never heard of Joseph G. Swift, William Gibbs McNeil, John Childe, George Whistler, David Douglass, Benjamin H. Latrobe, Charles Ellet, John A. Roebling, Generals Barnard, Totten, Alexander, Gillmore, and a host of others, who have been the pride and the ornaments of the profession in America; and if we look at the lives of Andrew Ellicott, James Geddes, Benjamin Wright, Canvass White, Gridley Bryant, and the other fathers of the profession in this country, we shall find them engaged in one long struggle, from youth to age, endeavoring to overcome that lack of knowledge of the theoretical part of engineering which it is the very work of the technical schools to furnish.

Our "practical man" remarks that "so far as the achievement of success, *i. e.*, the making of money by honorable means, is concerned, the higher technical education is of little or no help." It certainly is of no help to those who do not have it; but we have yet to see the man possessing a good technical education who would be willing to part with it. To see whether a good technical education has a "bread-and-butter" value or not, we have only to note how many of the best engineerships in this country are filled by graduates of foreign technical schools. It is only a short time since an engineer of long practice and of fair ability, but of very limited education, expressed to the writer his very decided objection to the numerous graduates of engineering schools, who were, according to his statement, "stepping in ahead of older men, and taking all the best places."

Suppose we apply the advice of the *Gazette* to a young man wishing to become a physician. We should say to him, "Don't bother your head about anatomy; but if you want to be a surgeon, go to work with a man who is cutting off legs. Don't waste any time on *materia medica*; but if you want to practise physic, go to work with a man who is making drugs and mixing pills. Don't throw away years in studying physiology; but 'plunge into practice.' Don't avail yourself of the

advice and counsel of the fathers of the medical profession; the accumulated experience of years is of no use to you: you are to deal with effects, not causes; you don't want principles; practice is what you need." How would this sound?

The advice of the *Gazette* is calculated to make good artisans, but not engineers; to make good subordinates, but not masters. The technical school is a product of the times. It arose to meet a pressing demand, and is every year making itself felt more and more. The courses of instruction have had their faults,—it would be very strange if it were not so; but these faults are rapidly being discovered and removed. The schools have, without the slightest question, been conducted in a manner too exclusively theoretical; but they are finding this out. They are coming to recognize the fact that the school has not only to lay a firm foundation in the general principles of engineering, but also to show the applications of those principles; to make the connection plain between theory and practice. If we consider the comparatively few years during which our technical schools have been in operation, we should rather be surprised at what they have accomplished than at what they have failed to do. They have now passed pretty well through the experimental stage, and are rapidly coming to that well-developed system which shall fully realize the intentions and the hopes of their founders.

G. L. V.

At the last annual convention of the Master Mechanics' Association, a report on the subject of a standard wire gauge was read. There are three systems of measurement in use, and the confusion caused thereby is increased by the inaccuracy of the ordinary wire gauge. The committee recommended the micrometer gauges made by Brown & Sharpe, which are simple and durable, and measure accurately thousandths of an inch. The report was adopted, and members of the Association will hereafter specify the thickness of plate in fractions of an inch.

Lacrosse is deservedly becoming popular in many colleges. The recent tournament in New York was won by Harvard. Hare and hound runs are also becoming common, and at Harvard have been made on the bicycle.

An exchange says it is not the frost that makes the smacking noise at the front gate these nights. No, it is the sudden thawing.

THE TECH.

NOYES BROTHERS,

NO. 4 SUMMER STREET, BOSTON, U. S. A.

FULL DRESS SHIRTS.

ENGLISH STYLES OF COLLARS.

ENGLISH NECKWEAR.

GOLD, SILVER AND BUCKHORN

MOUNTED CANES & UMBRELLAS.

ENGLISH SMOKING JACKETS.

LONG DRESSING GOWNS.

HOUSE AND STUDY COATS.

ENGLISH BATH WRAPS.

BATH TOWELS AND MITTENS.

LONDON TAN STREET GLOVES, \$1.35.

WARM LINED STREET GLOVES.

SCOTCH WOOL ULSTER GLOVES.

DRIVING AND SLEIGHING GLOVES.

SILK WRISTERS & MUFFLERS.

WINTER UNDERWEAR, ALL GRADES.

FINE MERINO HOSE 50 CTS. A PAIR.

ODD DESIGNS IN SCARF PINS.

FULL DRESS Collars, Ties and Studs.

LONDON & PARIS NOVELTIES.

THE CRUSH HAT

PATENTED AUG. 27, 1878.



SILVER MEDAL

Awarded at the 14th
Exhibition M. C. M.
Association, Boston.

The Crush Hat

Is correct in style,
very much lighter,
and by far the most
durable hat of its
kind; it is as shapely
as a silk hat, and
to insure superior
EXCELLENCE is
manufactured on
the premises.

Mut ed free to any
part on receipt of
price - \$7.00.

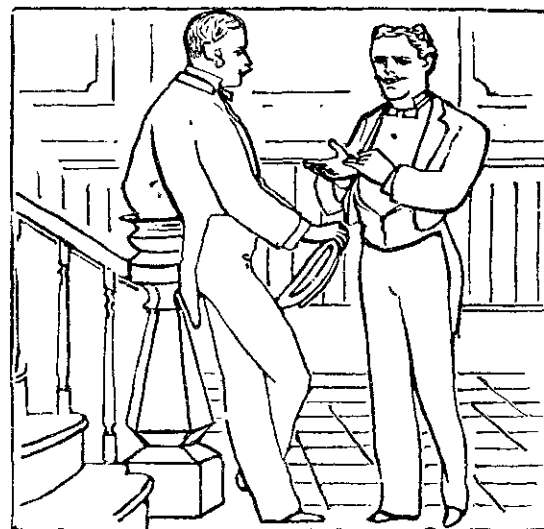
JUST RIGHT.

For RECEPTIONS, the THEATRE, PARTIES, WEDDINGS, Etc.

HARRINGTON the Hatter,

14 School Street, Boston.

There seems to be considerable apathy among the freshmen in regard to the usual freshman ball. Why is it thus? Although, perhaps, it cannot be given before the semi-annual exams. there will be time enough after them We think that there is material enough in '86 to carry through successfully a ball equal to that given by any class.



Boston Foreign Book Store.

CARL SCHOENHOF,

146 Tremont Street,

SECOND DOOR NORTH OF WEST STREET,

BOSTON.

To Students a Liberal Discount.

CLIFFORD, PERFUMER.

Perfumery and Toilet Articles.

Perfumes by the Ounce, any Odor, 40 Cents.

CLIFFORD'S COSMETIQUE, for arranging
the Moustache, 25 Cents per Stick.

23 SCHOOL STREET - - - BOSTON.

CRUSH HATS (latest New York styles)
\$5.50 at OAK HALL. DRESS SUITS MADE
TO ORDER. FIFTY DRESS COATS KEPT
TO LET. OAK HALL IS THE PLACE WHERE
EVERYTHING OF BEST QUALITY IS SOLD
AT REASONABLE PRICES. UNIFORMS,
GYMNASIUM, BOATING, TENNIS, FOOT-
BALL AND OTHER KINDS ALWAYS IN
STOCK. LEAVE YOUR MEASURE IN CUS-
TOM ROOM FOR WINTER SUIT. OVERALLS
AND BLOUSES FOR STUDENTS.

G. W. SIMMONS & SON,

Oak Hall, 32 to 44 North St., Boston.

CHARLES A. SMITH & CO.

IMPORTERS OF FINE WOOLENS,

DRAPERS AND TAILORS

18 and 20 School Street - - - BOSTON

W. E. HODGKINS.

C. G. BEAL.

L. W. LINCOLN
& CO.,

26 West Street,

Agents for

S. F. Whitman

and Sons'

Philadelphia

Chocolates

and

Caramels.

JOHN EARLE & CO. TAILORS,

Have always in Stock a CHOICE ASSORTMENT OF FINE GOODS for your Selection,

FROM THE BEST FOREIGN AND AMERICAN FABRICS.

DRESS SUITS LOANED FOR OCCASIONS.

No. 330 Washington Street, up stairs, BOSTON.

GRIFFIN'S
Engraving and Printing,
STATIONERY & WEDDING INVITATIONS,
58 Temple Place, Boston.

Next to Hogg, Brown & Taylor.

Engraved Plates and pack of cards, \$1.50.
Former price, \$3.00.

Get your Notes Bound at
J. H. GUARDENIER,
BOOK BINDER,
NO. 50 BROMFIELD STREET,
Near Tremont Street . . . BOSTON.

Old Books, Magazines, Music, Etc.

Neatly Bound in every Style, at Lowest Prices.

Portfolios of every descriptions for Photographs and
Engravings, made to order.

Now is the time to look up
last year's Christmas cards.
But look out that she does n't
receive the same one that she
sent you last year.

It was said to the Freshmen
at the drill the other day,
"The uniform prescribed to
be worn by the Faculty," etc.
It was meant, we hope, "The
uniform, prescribed by the
Faculty, to be worn," etc.

The "weight" of the class
of '86 is considerably lessened
by the departure of Mr. Crom-
well from the Institute.

F. WEIS & CO.

DEALERS IN

Hats, Caps,

—AND—

FURS.

Also, a Large Assortment of Silk Um-
brellas and Walking Canes.

533 Washington St. 533

Next Door to Boston Theatre.

—1882.—

FALL STYLES OF FINEST SHOES,

UNEXCELLED IN STYLE, QUALITY AND FIT.

SMALL BROTHERS,

371 Washington Street, corner Bromfield,

BOSTON.



TRADE-MARK.

THE TECH.

T. D. COOK, CATERER,

23 to 27 AVON STREET - - - BOSTON.

Wedding and other Parties receive Prompt and Careful Attention.

Norton Brothers, FLORISTS,

Hotel Berkeley,

Cor. BERKELEY and
BOYLSTON STS.

Greenhouses at
Dorchester.

No word was spoken when they met,
By either — sad or gay;
And yet one badly smitten was, —
'T was mentioned the next day.

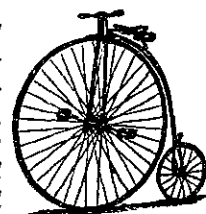
They met by chance, this autumn
eve,

With neither glance nor bow, —
They often came together so —
A freight train and a cow.
— *Ex.*

Fifteen dogs were attacked by
sheep in Fond du Lac County a
few nights since, and the sheep
were killed in self-defence. Far-
mers should tie up their sheep,
or there will be little encourage-
ment to dog owners.

Columbia Bicycle.

Thousands in use by
doctors, lawyers, mer-
chants, travellers, sales-
men, editors, reporters,
etc. Come and see them
at our warerooms, and
learn to ride, or send
three-cent stamp for our elegant illus-
trated catalogue.



THE FOPE MANUFACTURING CO.,
597 Washington Street - - BOSTON.

BOXING GLOVES, FENCING FOILS AND MASKS,

Favors for the German
BADGES,
Tights and Shirts for Gymna-
sium and Boating.

MILITARY AND REGALIA GOODS.
GOLD AND SILVER TRIMMINGS.
POLLARD & ALFORD,
104 TREMONT STREET, BOSTON.

THOMAS POWER & CO.

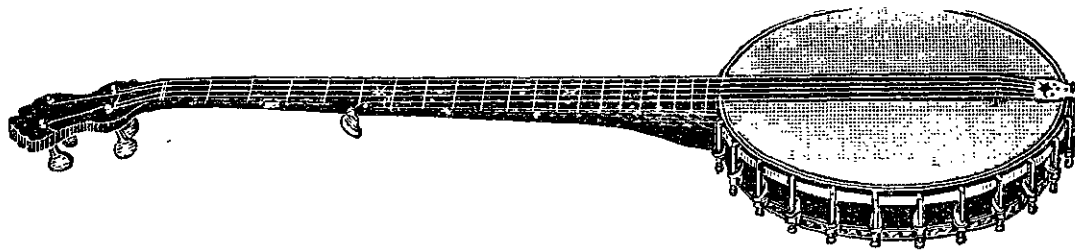
Manufacturers and Retailers of



All the Leading Styles of

GENTLEMEN'S FINE BOOTS, SHOES & GAITERS,
10 SCHOOL STREET, BOSTON.

THE TECH.



IF YOU ARE IN SEARCH OF
THE BEST BANJO IN THE WORLD,
AT THE MOST REASONABLE PRICE,

Embodying all of the latest original improvements, be sure and examine our make. We are the only teachers of the banjo in Boston who make their own instruments, and are original in every department. Send for Illustrated Price List.

FAIRBANKS & COLE, Makers and Teachers,
121 Court Street - - - BOSTON, U. S. A.

PIANOS

OF ALL MAKERS

For Sale and To Let.

All Musical Instructions,
All the New Sheet Music,
All kinds of Instruments,
Everything Musical,
At the store of

OLIVER DITSON & CO.
449 and 451 Washington St., Boston.

CLOUGH & SHACKLEY

(Successors to Daniel G. Wilkins),

APOTHECARIES,

7 Charles, near Beacon St.

BOSTON.

Physicians' Prescriptions a Specialty.

MY LITTLE BEAUTY.

When in the ardent west the long
day dies,
And thee in dress of flimsy white
I to some cushioned chair invite,
From thy loved presence every arrow
flies.

The curls float idly round thy resting
head ;
Under the spell of witchery
I lie in blissful ecstasy,
A hundred castles in the air out-
spread.

Thy rounded form I lovingly caress ;
Thee with my lips anon I press ;
Ne'er mortal was so pressed, I trow,
"My Little Beauty" is a cigarette,
you know.

Yale Courant.

BAKER & CUTLER,

DEALERS IN

Foreign and Domestic

GROCERIES,

Fancy Groceries,

Wines, Liquors, and Cigars.

216 Clarendon, cor. Boylston St.,

BOSTON.

HERBERT BAKER.

A. W. CUTLER.

ALFRED MUDGE & SON,
Book and Job Printers

34 SCHOOL ST., BOSTON.

BEGINNERS IN DANCING

RECEIVED AT

WALKER'S

Private Dancing Academy,

No. 24 Dwight Street,

On **THURSDAY EVENINGS** of each week at 7.30.

Private Lessons daily. Please call or send for circular.

Yours truly,

Russ Walker

THE TECH.

Special
Rates to Students.

Cabinets, \$5.00 per doz.
Cards . . . \$3.50 per doz.

E. F. Ritz
G. H. Hastings



Must be
certified by the Secretary
as a member of the "M. I. T."

147 Tremont Street,

(Corner West Street)

E. F. RITZ.

BOSTON.

G. H. HASTINGS.

Elevator to the Atelier.

Photographers to Class of '83.

THE
BRUNSWICK

BOSTON'S
GRANDEST
HOTEL,

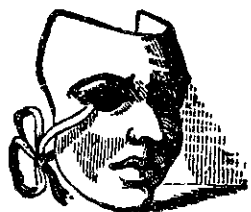
Near the Public
Garden, Common,
and Public Library,
Museum of Fine
Arts, New Old
South, Trinity
(Phillips Brooks's)



Church, and oppo-
site Institute of
Technology.

Beacon and Dart-
mouth Street and
all Back Bay Cars
pass the Hotel, for
either up or down
town, every three
minutes.

BARNES & DUNKLEE,
Proprietors.



CURTIS & WELD,
COSTUMERS,

AND DEALERS IN

Theatrical Goods,

2 HAYWARD PLACE . . . BOSTON.

Levi Tower, Jr. . . . Apothecary,
Cor. of Clarendon and Boylston Sts.

Particular attention given to Physicians' Prescriptions and Family Med-
icines. *Specialties:* Atkinson's White Rose, Stephanotis, Wood Violet
and Edelweis. Caswell & Massy's Toilet Colognes and Perfumes.
Also, the finest stock of Brushes and Toilet Goods of all kinds.

NEW ENGLAND SCHOOL FURNISHING CO.

MANUFACTURERS OF AND DEALERS IN

SCHOOL SUPPLIES AND STATIONERY,

27 TO 31 FRANKLIN STREET, BOSTON, MASS.

Successors to the Readers & Writers' Economy Co.

Special Rates to Students.



THE TECH.

SECURE YOUR COSTUMES

For the Christmas Night Carnival of the Olympian Club!

Roller Skating and Dancing in Olympian Hall and the Grand Hall.

REEVES'S AMERICAN BAND,

Of Providence,

TOMPSON'S AMERICAN BAND,

Of Boston,

And the GREAT ORGAN.

GRAND CIVIC AND MILITARY BALL IN COSTUME.

No one allowed on the floor without a uniform or costume
until after 10 o'clock.

Exhibition of Trick and Fancy Skating by
Prof. Wm H. Field,

The acknowledged "King of the Rollers." Also by

Miss Ella Stetson,

Prof. Harry W. Tufts,
Champion Trick Bicyclist of the World; and

Prof. Scott,

In perilous and astonishing feats upon the "Silent Steed."

\$10,000 worth of Elegant Costumes will be on the Floor.

Promenade Concert at 8; Grand March at 9 o'clock.

Tickets, Including Admission to both Halls, 50 Cents.

KEEP'S SHIRTS.

The very best to measure.

SIX FOR \$9.00.

Best four-ply Linen Collars, 90c. per
half dozen.

Best four-ply Linen Cuffs, 25c. per pair.
Underwear, Neck wear, Umbrellas,
Gloves and all Furnishings the best,
and at the lowest prices in the city.

KEEP MANUFACTURING CO.

112 Tremont Street.

FACING THE COMMON.

At Engelhardt's Restaurant,

For Ladies and Gentlemen,

MAY BE FOUND

Private Dining Rooms,

For Large and Small Parties,

WITH A DAILY BILL OF FARE, AND CAREFUL
SERVICE.

173 & 174 Tremont Street,

BOSTON.

DID you notice the long faces
of the Freshmen, Thursday?
They were told their results in
the chemistry examination.

SEVERAL Freshmen finished
their general chemistry before
Thanksgiving, and are now well
into qualitative analysis.

WAS there a prize offered for
the invention of the ugliest shape
of drill cap? Freshmen in gen-
eral believe it, and would like
to have an "interview" with the
inventor.

Foreign Novelties.

AMES & MAKECHNIE,

Gentlemen's Outfitters

FINE CUSTOM SHIRT MAKERS.

Manufacturers of the

A. & M. SHIRT.

29 School Street.

OSCAR GOWING,

Expert Maker of

SHIRTS,

330 Washington Street,

NEAR MILK.

Route of the Queen.

By BILL.

| | | |
|------------|----------------|-----------------|
| Monday, | } | - - - PORTLAND. |
| Tuesday. | | |
| Wednesday, | | |
| Thursday, | - - - - SALEM. | |
| Friday, | } | - - - - LYNN. |
| Saturday, | | |

ARTISTIC TAILORING.

FRANK D. SOMERS,

Formerly with Chas. A. Smith & Co.

CHAMBERS - - - 414 WASHINGTON STREET.

HELIO TYPE ENGRAVINGS.

Beautiful Engravings, finely finished and carefully chosen, and very suitable for the decoration of rooms, when neatly framed; also for portfolios, and to be studied as types of Art. They contain the finest works of the ancient ITALIAN AND GERMAN masters; and also the very choicest of modern FRENCH AND BRITISH pictures.

They are printed with black ink, on heavy bevelled plate paper, 19 x 24 inches in size; and are sold for the remarkably low price of

Fifty Cents Each.

A few of extra large sizes are ONE DOLLAR each.

Call and examine our collection of hundreds of subjects, at the

Heliotype Art Gallery,
213 AND 215 TREMONT STREET.



ARTIST PHOTOGRAPHER,

No. 493 Washington Street, Boston,

Corner of Temple Place.

CLASS PHOTOS A SPECIALTY.

PALMER, BACHELDER & CO.

SELL

**Fine Watches, Choice Diamonds,
Rich Jewelry, Sterling Silver
Ware,**

Society Pins and Medals,

**Paris Clocks, French Bronzes, Bisque
Figures, Artistic Pottery and
Oil Paintings.**

**AT No. 394 WASHINGTON STREET,
BOSTON.**

WARD & GAY,

No. 184 DEVONSHIRE STREET,

ALSO, TILL JAN. 1, 1883,

No. 407 Washington Street.

PHOTOGRAPH ALBUMS,

PAPETERIES,

FANCY GOODS,

FINE PAPERS AND ENVELOPES.

Our new sample books sent FREE to any address.

GRANT & BROWN,

Dealers in Supplies and

OUTFITS FOR AMATEUR PHOTOGRAPHERS.

Agents for Scovill Manuf. Co. and American Optical Co., Outfits of E. & H. T. Anthony, Walker's Challenge and Pocket Cameras, Blair Tourograph Co.

SUCCESS GUARANTEED.

CATALOGUES FREE.

GRANT & BROWN - - - - - 13 Bromfield Street, Boston.

**JOSEPH GILLOTT'S
STEEL PENS.**

For Fine Writing, No. 1, 303, 170. For Broad Writing, 294, 359, 349. For General Writing, 332, 404, 390 & Falcon—878, 908. Other Styles to suit all hands.

Sold by all Dealers throughout the World.
For Draughtsmen's Use, Nos. 290, 291, 659 and 850.



FROST & ADAMS, BOSTON,

Importers and Manufacturers of

DRAWING MATERIALS.

A Large Stock of the Best Supplies for
STUDENTS, ENGINEERS AND SURVEYORS.

No. 37 CORNHILL.

SEND FOR ILLUSTRATED CATALOGUE.

The "Dundee" Winter Overcoat, FOR GENTLEMEN.

\$15.

In three shades, Oxford, Black, and Terra Cotta Mixtures. All Corded Diagonal patterns; four correct styles, two with Mohair binding, and two with stitched edges. Substantial city make, and well trimmed. Strictly All Wool. Weather and wool tested, and therefore warranted not to fade. For fit, finish, and durability the "DUNDEE" cannot be surpassed at

\$15.

We have never before this season been able to manufacture Overcoats from the celebrated "DUNDEE" fabrics so as to be able to place them upon our counters at a less price than \$20.

A. SHUMAN & CO., Manufacturers, Jobbers and Retailers,

Gentlemen's
Retail Department.

440 Washington Street.

To Corner
Summer Street.

WADSWORTH BROS. & HOWLAND,

Importers and Dealers in

MATHEMATICAL INSTRUMENTS,

Architects' and Engineers' Stationery and Artists' Materials.

MANUFACTURERS OF

DESIGNERS' COLORS,

Moist and Dry.

84 WASHINGTON STREET, BOSTON.

CATALOGUES FREE UPON APPLICATION.

